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2171	14

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/668,077	CHU ET AL.	
	Examiner	Art Unit	
	Brian Goddard	2171	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-67* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27,29-41,43-47 and 49-67* is/are rejected.

7)☒ Claim(s) *28,42 and 48* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 September 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11,13*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to the Request for Continued Examination filed 01 December 2003 and Amendment B, filed 03 November 2003.

2. Claims 1-67 are pending in this application. Claims 1, 31, 45 and 46 are independent claims. In Amendment B, no claims were added or cancelled, and claims 1, 31, 45 and 46 were amended. This action is non-final.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 2, 5, 6, 8, 10, 11, 25-27, 29, 45-47 and 49-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,692,107 to Simoudis et al. in view of U.S. Patent No. 5,832,450 to Myers et al.

Referring to claim 1, Simoudis discloses a data mining system and method for creating data models from a plurality of data sources and storing the models in a repository. See Figures 1-4 and the corresponding portions of the specification for this disclosure. Simoudis' model repository system comprises:

a data store [Data Sources 114] for storing a plurality of data records [See column 3, line 49 – column 4, line 34];

a data mining application [Data Analysis Modules 104 and 104' (See column 3, lines 15-40)] for analyzing the data records [Step 206] and for generating a plurality of data models [Step 208]; and

a model repository [Knowledge Repository 110] for storing the generated data models [Step 209], wherein the model repository includes a plurality of attributes associated with the data models ['high level concepts and interrelations among attributes' (See column 4, lines 10-15) and 'goal attributes' (See column 6, lines 20-22)];

wherein the data models are predictive data models [See the title, abstract, summary, and description of Simoudis' invention].

Simoudis does not explicitly disclose that the model repository includes one or more index structures containing the plurality of attributes as claimed. In other words, Simoudis does not explicitly state that the knowledge repository is indexed by the attributes of the models. However, to provide meaningful retrieval of models from the repository for further analysis, the repository would have to be indexed in some manner to allow a user to search for the desired data model(s). This provides suggestion for indexing the knowledge repository by the attributes associated with the data models, as claimed.

Myers teaches indexing a computerized repository by the attributes associated with its stored data models in order to provide meaningful retrieval of the models. See column 6, lines 14-29 for this disclosure.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Myers' indexing to the knowledge repository of Simoudis,

providing an index structure containing the attributes associated with the data models stored within the repository. One would have been motivated to do so in order to provide the ability to efficiently search the model repository for a desired data model as described above.

Referring to claim 2, the system of Simoudis in view of Myers as discussed above with regard to claim 1 discloses the invention as claimed. Simoudis' model repository system further comprises "a model repository facility [Server 106] for exporting the generated data models to the model repository [See Figure 1, and column 3, line 62 – column 4, line 15]" as claimed.

Referring to claim 5, the system of Simoudis in view of Myers as discussed above with regard to claim 1 discloses the invention as claimed. Simoudis' model repository system further comprises "a search and retrieval interface [Graphical User Interfaces 102, 105 & 105'] for searching the one or more index structures [See claim 1 above] in the model repository and for retrieving one or more of the data models ['the models may be retrieved from the knowledge repository 110' (Column 5, lines 54-58)] based on the searching by the search and retrieval interface" as claimed. Also see Figures 4 & 5 and the corresponding portions of Simoudis' specification for this disclosure.

Referring to claim 6, the system of Simoudis in view of Myers as discussed above with regard to claims 1 and 5 discloses the invention as claimed. See the discussion regarding claim 5 for the details of this disclosure. In particular, Simoudis' (as modified by Myers) search and retrieval interface [Graphical User Interfaces 102,

105 & 105'] "is incorporated into a software application [103, 104 and 104'] for automatically searching the index structures in the model repository and for retrieving one or more of the data models [See claim 1 above & Simoudis' description of Fig. 1]" as claimed.

Referring to claim 8, the system of Simoudis in view of Myers as discussed above with regard to claims 1 and 5 discloses the invention as claimed. See the discussion regarding claim 5 for the details of this disclosure. Simoudis' search and retrieval interface (102, 105 & 105') is a stand-alone graphical user interface (GUI) for manually searching the index structures in the model repository and for retrieving one or more of the data models as claimed.

Referring to claims 10 and 11, the system of Simoudis in view of Myers as discussed above with regard to claims 1 and 2 discloses the invention as claimed. See Figure 1 and the corresponding portion of Simoudis' specification for this disclosure. It appears from Figure 1 that the model repository facility [Server 106] is a stand-alone software application as claimed in claim 11. However, it can also be interpreted that the data mining applications (104 & 104') are part of the server computer itself, and thus the model repository facility could be integrated into the data mining application instead of a stand-alone software application. Common knowledge of the art would allow either of these implementations to be interpreted from Simoudis' disclosure. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate Simoudis' model repository facility into the data mining applications, or to

implement it as a stand-alone software application, depending on the hardware and other resources available.

Referring to claims 25 and 26, the system of Simoudis in view of Myers as discussed above with regard to claim 1 discloses the invention as claimed. See the discussion above regarding claim 1 for the details of this disclosure. Simoudis' goal attributes associated with each data model is manually associated with the model by a user of the system as claimed in claim 26. See column 6, lines 20-22 of Simoudis' specification for this disclosure. The other attributes associated with each data model in Simoudis' repository are automatically associated with each data model by the data mining application as claimed in claim 25. See column 4, lines 10-15 of Simoudis' specification for this disclosure.

Referring to claim 27, the system of Simoudis in view of Myers as discussed above with regard to claim 1 discloses the invention as claimed. See also the discussion regarding claims 25 and 26 above for the details of this disclosure. The indexing system of Myers, as applied to the model repository of Simoudis, includes many different index forms for storing different sets of attributes as claimed. See column 5, lines 34-38 for this disclosure. In using an indexing structure/method such as Myers' within the system of Simoudis as above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement different indexes for storing different sets of attributes to the data models as done in Myers' system. One would have been motivated to do so for the reasons discussed in claim 1,

and also to separately index the different types of attributes of Simoudis' system (as discussed with regard to claims 25 and 26 above).

Referring to claim 29, the system of Simoudis in view of Myers as discussed above with regard to claims 1 and 2 discloses the invention as claimed. Myers' index is built when objects are added to the database, as would any similar index, because any time a new object is added to the database its index must be built (or rebuilt) in order to effectively index the new object in the database. Therefore, in using an indexing structure/method such as Myers' within the system of Simoudis as above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to build the index structures for the model repository (110) after one or more selected models have been exported to the model repository. One would have been motivated to do so for the reason specified above, so the index is maintained constantly to include every object contained in the repository.

Referring to claim 45, the system and method of Simoudis in view of Myers as discussed above with regard to claims 1, 2 and 5 discloses the method as claimed. Simoudis discloses a data modeling method comprising the steps of:

associating one or more attributes with each of a plurality of data models [See claim 1 above];

exporting the plurality of data models to a model repository [See claim 2 above];

generating one ore more index structures comprising the one ore more attributes of each of the data models in the model repository [See claim 1 above]; and

providing a search mechanism and a retrieval mechanism for searching the one or more index structures in order to retrieve one or more data models from the model repository [See claim 5 above];

wherein the data models are predictive data models [See claim 1 above].

Referring to claim 46, the system of Simoudis in view of Myers as discussed above with regard to claims 1 and 5 discloses the invention as claimed. Simoudis discloses a computer-implemented model repository system for managing data models, comprising:

a model repository that stores the data models [See claim 1 above];

a data input module [GUIs 102, 105 & 105'] the processes attribute information descriptive of the data models [See claim 5 above]; and

at least one searchable index whose data structure contains storage locations for the attribute information [See claim 1 above];

said attributes in the index are searchable in order to locate at least one of the data models [See claims 1 and 5 above];

wherein the data models are predictive data models [See claim 1 above].

Claim 47 is rejected for the same reasons as claim 29 above, in light of the discussion regarding claim 46. See the discussions regarding claims 1, 2 and 29 above for the details of this disclosure.

Referring to claim 49, the system of Simoudis in view of Myers as discussed above with regard to claim 46 discloses the invention as claimed. Simoudis' model repository system is "built on a distributed client/server architecture." (Column 3, lines

62-63) Although it is not explicitly stated, this directly implies that the system is distributed over a network, and thus receives the search requests across the network.

Furthermore, Myers system and method is in fact distributed over a network, and receives queries (search requests) across the network. See Figure 1 and the corresponding portion of the specification for this disclosure.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to connect Simoudis' system to a network and receive the index search request across the network, such as done by Myers. One would have been motivated to do so because of the direct implication from Simoudis above, in order to distribute the system so it can be used from multiple locations (clients).

Referring to claim 50, neither Simoudis nor Myers explicitly disclose the network is an Internet network as claimed. However, the Internet is a network of common knowledge in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to connect Simoudis' system to the Internet as the network provided in claim 49 above. One would have been motivated to do so because this is common practice in the art, in order to distribute the information as widely as possible.

Claim 51 is rejected for the same reasons as claim 5 above, in light of the discussion regarding claim 46. See the discussions regarding claims 1 and 5 above for the details of this disclosure.

4. Claims 7 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simoudis in view of Myers as applied to claims 1, 5 and 6 above, and further in view of U.S. Patent No. 5,845,278 to Kirsch et al.

Referring to claim 7, Simoudis' (as modified by Myers) data models "comprise predictive statistical models" as claimed See the title, abstract, summary, and description of Simoudis' invention for this disclosure. . Simoudis' software application (as above) does not include a comparison algorithm for determining which of the data models of the one or more retrieved data models is the most relevant model as claimed. However, it is clear from Simoudis' specification that only one model is desired in most cases, and the desired model is logically the most relevant model to the user's query. This provides suggestion for implementing an algorithm to determine the most relevant data model from the user's query into the software applications of Simoudis' system.

Kirsch discloses a search and retrieval system in which objects are indexed and searching is performed on the index to retrieve the most relevant object(s). See column 9, lines 37-48 for this disclosure. Kirsch discloses a software application [meta-index search engine 14] including a comparison algorithm ['ranking algorithm'] for determining which of the indexed documents is the most relevant document to the search terms of the user query.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Kirsch's ranking (comparison) algorithm into Simoudis' software applications in order to determine which of the data models of the

one ore more retrieved data models was the most relevant. One would have been motivated to do so because of Simoudis' suggestion described above.

Claim 53 is rejected for the same reason as claim 7, in light of the discussion regarding claim 46 above. See the discussion regarding claim 7 for the details of this disclosure.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simoudis in view of Myers as applied to claim 1 above, and further in view of U.S. Patent No. 6,240,411 to Thearling.

Simoudis does not explicitly disclose that the data store (114) is a data warehouse as claimed.

Thearling discloses a data mining system in which data models are stored in a model library (repository) similar to that of Simoudis. Thearling's data store (storing a plurality of data records) is a data warehouse (125) as claimed. See Figure 12 and the corresponding portion of Thearling's specification for this disclosure.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to organize Simoudis' data store (114) into a data warehouse, such as Thearling's (125), because this would bring Simoudis' data store records to one central location (such as in an organization/company) while still allowing the storage of tremendous amounts of data needed for analysis.

6. Claims 12-17 and 54-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simoudis in view of Myers as applied to claim 1 above, and further in view of U.S. Patent No. 6,381,605 to Kothuri et al.

Referring to claim 12, the index structures of Myers (as applied to Simoudis' system above in claim 1) do not explicitly include a main index and one or more special index, wherein the main index includes attributes of all the data models and the special indexes include attributes from a sub-set of the models as claimed.

Kothuri discloses a hierarchical indexing system and method for indexing multi-attribute data in sets and subsets. See Figures 3-7B and the corresponding portions of Kothuri's specification for this disclosure. Refer specifically to column 12, lines 45-56 for the following teaching. Kothuri discloses an index structure including a main index [R-tree index over a given set of multi-attribute data] and one or more special indexes [R-tree indexes on a given subset of multi-attribute data], wherein the main index includes attributes of all the multi-attribute data stored in the repository [database], and the one or more special indexes include attributes from a sub-set of all the multi-attribute data stored in the repository.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate Kothuri's indexing method into the system and method of Simoudis such that the model repository index included a main index for all the data models (multi-attribute data) and one or more special indexes for subsets of all the models stored in the repository. One would have been motivated to do so because this would improve the search and retrieval efficiency of the indexing system.

Referring to claim 13, the system of Simoudis in view of Myers and Kothuri as discussed above with regard to claims 1 and 12 discloses the invention as claimed. Again, see Figures 3-7B and the corresponding portions of Kothuri's specification for this disclosure. The one or more special indexes (on the subset of data models) include a tree-type index [R-tree index (See figure 4)] for storing attributes associated with models that are generated using a decision tree algorithm [VAMSplit algorithm] as claimed.

Referring to claim 14, the system of Simoudis in view of Myers and Kothuri as discussed above with regard to claims 1, 12 and 13 discloses the invention as claimed. See Figure 2 and the corresponding portion of Kothuri's specification for this disclosure. Kothuri's index (as implemented in Simoudis' system above in claims 12 & 13) further comprises a mini-index [Metadata Table] associated with the tree-type index [See Step 208] for storing a sub-set of all the attributes stored in the tree-type index as claimed.

Referring to claim 15, the system of Simoudis in view of Myers and Kothuri as discussed above with regard to claims 1, 12 and 13 discloses the invention as claimed. See Figure 5 and the corresponding portion of Kothuri's specification for this disclosure. The attributes stored in Kothuri's R-tree (tree-type) index (as implemented in Simoudis' system above in claims 12 & 13) include a plurality of splitting variables [Node Capacities] associated with the decision tree algorithm as claimed.

Referring to claim 16, the system of Simoudis in view of Myers and Kothuri as discussed above with regard to claims 1 and 12 discloses the invention as claimed. See figure 2 and the corresponding portion of Kothuri's specification for this disclosure.

In particular, Kothuri's index structures (as implemented in Simoudis' model repository) are organized into attribute tables ['INDEX table...to store the nodes of the new index...configured to include one or more of the fields (attributes)' (Column 9, lines 37-52)] as claimed.

Referring to claim 17, the system of Simoudis in view of Myers and Kothuri as discussed above with regard to claims 1, 12, 13 and 16 discloses the invention as claimed. See figures 2-7 and the corresponding portions of Kothuri's specification for the details of this disclosure. Kothuri's INDEX tables (attribute tables) include a main attribute table for storing a main index [the 'one or more fields'] and a tree-type table for storing a tree-type index [the 'nodes']...and a mini-index attribute table [Metadata Table (See claim 14 above)] as claimed.

Claims 54-57 are rejected for the same reasons as claims 12-15 respectively, in light of the discussion regarding claim 46 above. See the discussions regarding claims 12-15 for the details of this disclosure.

7. Claims 30 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simoudis in view of Myers as applied to claim 1 above, and further in view of U.S. Patent No. 5,842,197 to Ho.

Referring to claim 30, the system of Simoudis in view of Myers as discussed above with regard to claim 1 discloses only one model repository (Knowledge Repository 110) for storing the generated data models and including index structures containing a plurality of attributes that describe the data models. See the discussion

regarding claim 1 above for this disclosure. These references do not teach a plurality of such model repositories as claimed.

Ho teaches a plurality of data repositories indexed separately depending on the attributes of the data contained within. See the Abstract, Summary of the Invention, Figure 5 and the corresponding portion of Ho's specification for this disclosure.

In light of the desire to archive more models, or models of different types and sizes, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a plurality of Simoudis' knowledge (model) repositories (110) for storing the generated data models and indexing each repository by the attributes of the models stored within, as provided by Ho's teaching.

Claim 65 is rejected for the same reason as claim 30, in light of the discussion regarding claim 46 above. See the discussion regarding claim 30 for the details of this disclosure.

8. Claims 31, 33, 34, 36, 37, 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simoudis in view of Myers as applied to claims 1 and 2 above, and further in view of U.S. Patent No. 6,263,337 to Fayyad et al.

Referring to claim 31, the system and method of Simoudis in view of Myers as discussed above with regard to claims 1 and 2 discloses a data mining method, comprising the steps of:

generating a plurality of data models [Simoudis: Step 208 (Figure 2)] using a data mining application [Data Analysis Modules 104 and 104']; (See claim 1 above)

storing the plurality of data models [Simoudis: Step 209 (Figure 2)];

exporting the data models [(See claim 2 above)] to a model repository [Simoudis: Knowledge Repository 110 (Figure 1)]; and

generating an index of the data models stored in the model repository wherein the index is based upon a plurality of attributes associated with the data models in the model repository (See the combination of Myers and Simoudis in claim 1 above);

wherein the data models are predictive data models [See the title, abstract, summary, and description of Simoudis' invention].

Simoudis does not explicitly teach storing the data models in a database associated with the data mining application as claimed. Thus, Simoudis does not explicitly teach selecting one or more of the plurality of data models to export from the database to the model repository (110) as claimed. However, Simoudis does leave the storing of the models open to interpretation, stating that "the extracted predictive model then may be saved 209, for example in the knowledge repository 110." (Column 4, lines 43-58) This provides direct suggestion that the data model can be stored (saved) to another location besides the knowledge repository. Furthermore, Simoudis also states that the data models are, "retrieved to [stored in] a memory register when in use." (Column 4, lines 3-5) This also provides suggestion for storing the data models in a local storage relative to the data mining application that generated each model.

Fayyad discloses a data mining system and method similar to that of Simoudis. See Figures 2-5 and the corresponding portions of the specification for this disclosure. Refer specifically to column 5, lines 10-33 for the details of the following disclosure.

Fayyad teaches storing data models generated by a data mining application in three data subsets: a retained data set (models needed for further analysis), a discarded data set (models not necessarily needed for long term analysis), and a compressed data set. These data subsets are stored in a memory (RAM 22) associated with the data mining engine (application) 12. See Figure 2 for this disclosure.

In light of a desire to store/access more data models in the system while not crowding the model repository with models unnecessary for further/long-term analysis, it would have been obvious to one of ordinary skill in the art at the time the invention was made to store Simoudis' data models in a database associated with the data mining application that generated them (as taught by Fayyad), and allow the user to select only those models desired for further/long-term analysis to be exported to the model repository 110. One would have been motivated to do so for the reasons stated above, in light of the suggestion provided by Simoudis to store the models only where they are needed.

Claim 33 is rejected for the same reasons as claim 5 above, in light of the discussion regarding claim 31. See the discussion regarding claim 5 for the details of this disclosure.

Claim 34 is rejected for the same reasons as claim 6 above, in light of the discussion regarding claim 31. See the discussion regarding claim 6 for the details of this disclosure.

Claim 36 is rejected for the same reasons as claim 25 above, in light of the discussion regarding claim 31. See the discussion regarding claim 25 for the details of this disclosure.

Claim 37 is rejected for the same reasons as claim 26 above, in light of the discussion regarding claim 31. See the discussion regarding claim 26 for the details of this disclosure.

Claims 43 and 44 are rejected for the same reasons as claim 29 above, in light of the discussion regarding claims 1 and 31. See the discussion regarding claim 29 for the details of this disclosure.

9. Claims 3, 4, 32 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simoudis in view of Myers and Fayyad as applied to claims 1, 2 and 31 above, and further in view of U.S. Patent No. 6,411,961 to Chen.

Referring first to claim 32, the method of Simoudis in view of Myers and Fayyad as discussed above with regard to claim 31 discloses organizing the database into three subsets. (Fayyad) Fayyad does not teach organizing the database into a plurality of project folders and storing the data models in the respective project folders within the database as claimed.

Chen does disclose organizing a database of models into a plurality of project folders and storing the data models in the respective project folders within the database, as claimed. See Figures 6A-6F and the corresponding portions of Chen's specification

for this disclosure. Refer specifically to column 12, lines 19-55 for the details of this disclosure.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Chen's organization system to organize the data within the database associated with the data mining application of Simoudis' system (as above) into project folders and store the data models in the respective project folders within the database upon creation. One would have been motivated to do so in order to provide a meaningful organization of the models for easy access and retrieval based on the different projects analyzed by the respective data models.

Claim 3 is rejected on the same basis as claim 32. See the discussion regarding claims 31 and 32, in light of the discussion regarding claims 1 and 2 above, for the details of this disclosure. The database organized into a plurality of project folders (as described above) provided by the system and method of Simoudis in view of Myers, Fayyad, and Chen is a project folder store associated with the data mining application for temporary storage of the generated data models as claimed.

Claim 4 is rejected on the same basis as claims 31 and 32. See the discussion regarding these claims, in light of the discussion regarding claims 1 and 2 above, for the details of this disclosure. Refer specifically to the discussion of steps 2-4 of the method claimed in claim 31.

Claim 52 is rejected on the same basis as claim 3, in light of the discussion regarding claim 46 above. See the discussions regarding claim 3 and 32 above for the details of this disclosure.

10. Claims 18-24, 58-64, 66 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simoudis in view of Myers as applied to claim 1 above, and further in view of Chen.

Referring to claim 18, the system of Simoudis in view of Myers as discussed above with regard to claim 1 does not explicitly disclose that Simoudis' model repository is organized into a plurality of storage levels as claimed. However, as discussed above with regard to claim 32, Chen does disclose a model database organized into a plurality of storage levels. See the discussion above, and Figures 6A-6F and the corresponding portions of Chen's specification for this disclosure.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to organize Simoudis' model repository (110) into Chen's plurality of storage levels, because this would provide a meaningful organization of the models for easy access and retrieval based on the different projects analyzed by the respective data models.

Referring to claim 19, the system of Simoudis in view of Myers and Chen as discussed above with regard to claim 18 discloses the invention as claimed. Chen's plurality of storage levels (as provided on Simoudis' model repository above) include a project level [See element 502 in Fig. 6A], a diagram level [Elements 504-516 in Fig. 6A], and a model level [Elements 552-559 in Fig. 6E] as claimed.

Referring to claims 20 and 21, the system of Simoudis in view of Myers and Chen as discussed above with regard to claims 18 and 19 discloses the invention as

claimed. See Figures 6A and 6E and the corresponding portions of Chen's specification for this disclosure. Chen's data models [Business models 552-559] are stored at the model level (see above) and are associated with a particular diagram [504-516 (ReverseStarSchema diagram 504 in the example case of Fig. 6E)] stored at the diagram level as claimed. Thus, in applying Chen's structural organization to the model repository of Simoudis, the same would apply there as well.

Referring to claims 22 and 23, the system of Simoudis in view of Myers and Chen as discussed above with regard to claims 18-21 discloses the invention as claimed. Again, see Figures 6A-6F and the corresponding portions of Chen's specification for this disclosure. Chen's diagrams stored at the diagram level do not explicitly include specifications for operating the data mining application as claimed. However, the diagrams (504-516 in Fig. 6A) are all different forms of data modeling for the same type of data. Therefore, in order to provide the correct form for each model, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the specifications for the data modeling form with each diagram stored at the diagram level. Finally, each of Chen's diagrams stored at the diagram level is associated with a particular project folder stored at the project level as claimed. See Figure 6A and the corresponding portion of Chen's specification for this disclosure. Thus, in applying Chen's structural organization to the model repository of Simoudis, the same would apply there as well.

Referring to claim 24, the system of Simoudis in view of Myers and Chen as discussed above with regard to claims 18 and 19 discloses the invention as claimed.

See column 10, lines 26-55 of Chen's specification for this disclosure. The attributes of each data model on Chen's system are associated with the model level (at least one of the model level, the diagram level, or the project level) as claimed. Refer specifically to column 10, lines 36-38 for the details of this disclosure. Thus, in applying Chen's structural organization to the model repository of Simoudis, the same would apply there as well.

Claims 58-64 are rejected for the same reasons as claims 18-24 respectively, in light of the discussion regarding claim 46 above. See the discussions regarding claims 18-24 for the details of this disclosure.

Referring to claims 66 and 67, the system of Simoudis in view of Myers as discussed above with regard to claim 1 does not disclose group-specific index for storing group-specific attributes as claimed. Thus, these references fail to teach a marketing-specific index and a sales-specific indexes as claimed.

Chen does disclose group-specific indexes for storing attributes specific to marketing and sales as claimed. See Figures 1 and 6A-6F and the corresponding portions of the specification for this disclosure. Refer specifically to column 6, lines 13-22 and Figure 6E.

In grouping Simoudis' models by Chen's organization as above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide group-specific indexes for storing group-specific attributes for marketing, sales, and other similar combinations as taught by Chen. One would have been motivated to

do so in order to provide fast, efficient access of the data for the most thorough analysis possible for a specific application.

11. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simoudis in view of Myers and Fayyad as applied to claims 31 and 34 above, and further in view of Kirsch.

The claim is rejected for the same reasons as claim 7 above, in light of the discussion regarding claims 31 and 34. See the discussion regarding claim 7 for the details of this disclosure.

12. Claims 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simoudis in view of Myers and Fayyad as applied to claim 31 above, and further in view of Kothuri.

Claim 38 is rejected for the same reasons as claim 12 above, in light of the discussion regarding claim 31. See the discussion regarding claim 12 above for the details of this disclosure.

Claim 39 is rejected for the same reasons as claim 17 above, in light of the discussion regarding claim 31. See the discussion regarding claim 17 above for the details of this disclosure.

13. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simoudis in view of Myers and Fayyad as applied to claim 31 above, and further in view of Chen.

The claim is rejected for the same reasons as claim 18 above, in light of the discussion regarding claim 31. See the discussion regarding claim 18 above for the details of this disclosure.

14. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simoudis in view of Myers and Fayyad as applied to claim 31 above, and further in view of U.S. Patent No. 5,101,374 to Sinutko.

The method of Simoudis in view of Myers and Fayyad as discussed above with regard to claim 31 does not explicitly disclose the details of the exporting step as claimed. Specifically, the references do not teach specifying an address of the model repository; determining whether a user who selected the one or more data models has write access to the model repository; and exporting, or notifying the user that the operation cannot be accomplished, based on the write access determination as claimed. However, Simoudis' system, "is built on a distributed client/server architecture" and, "the server 106 accesses and maintains a line to...a knowledge repository 110." This provided direct suggestion that the server must specify an address ('a line') of the model repository 110 in order to export the models.

Sinutko discloses a system and method for storing information in a repository with privileged access and address specification. See the Background of the Invention

section, Summary of the Invention section, Figures 1-5 and the corresponding portions of the specification for this disclosure. Sinutko teaches the exporting of data to a storage device comprising the steps of:

specifying an address of the repository ['the subject's relative read or write address' (Column 2, line 45)];

determining whether a user who selected the data has write access to the repository ['the subject's access privilege(s) and a read or write signal' (Column 2, lines 45-65)]; and

writing the data to the repository identified by the address if the user does have write access, or notifying the user that the write operation has failed if the user does not have write access (See column 3, lines 9-31 and column 4, lines 12-33).

In the interest of maintaining the integrity of the data models within the repository system, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Sinutko's method (or a similar method) into Simoudis' system in order to export data models from the server (106) to the repository (110). One would have been motivated to do so in order to maintain only those models generated by an appropriate user, and because of the suggestion provided by Simoudis above.

Allowable Subject Matter

15. Claims 28, 42 and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is the examiner's statement of reasons for allowance:

The prior art made of record fails to anticipate or make obvious the claimed invention. Specifically, the prior art fails to teach, in combination with the remaining elements:

at least three configuration files stored in the model repository, wherein a first configuration file stores information that is used by the model repository facility in exporting the generated data models to the model repository, and second and third configuration files store information that is used by the model repository system in building the main index in the model repository from attributes supplied by human end users and from the data mining application.

Simoudis does not teach configuration files for storing this information. Other prior art made of record such as Ghafir et al, Hansen, and Leprince et al. teach configuration files storing information used to export data to a specific location, but are silent on configuration files storing information used to build an index of a repository. Furthermore, there is no motivation to combine these teachings with those of Simoudis.

Response to Arguments

16. Applicant's arguments filed 03 November 2003 have been fully considered but they are not persuasive.

Referring to applicants' remarks on pages 17-20 regarding the 103 rejections of the independent claims: Applicants argued that Myers data models are not predictive data models as required by the independent claims.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In the instant case, Simoudis' data models stored in the model repository (and indexed by the addition of Myers' index structure in the combination) are predictive data models as claimed. Thus, the combination teaches each and every claim limitation as set forth above.

It is also noted that applicants' arguments are based on a specific example of a "predictive data model" termed a predictive decision tree data model, which is unfounded in the claim language. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Goddard whose telephone number is 703-305-7821. The examiner can normally be reached on M-F, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for all communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

bdg
17 February 2004

SAFET METJAHIC
SUPERVISORY PATENT EXAMINER
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